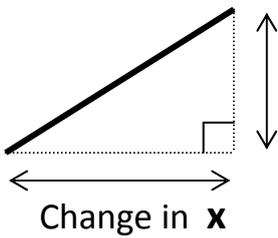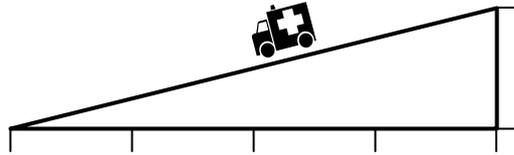**1 in 4**

Gradients tell you how **steep** a slope is.

This road sign warns that the road has a steep gradient.

For every **4 units** you travel horizontally
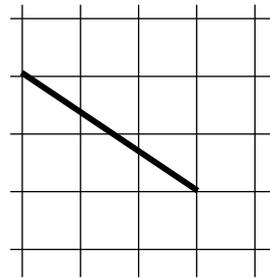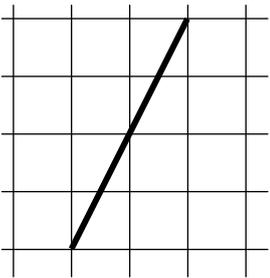you go up (or down) **1 unit**.

Change in **y**
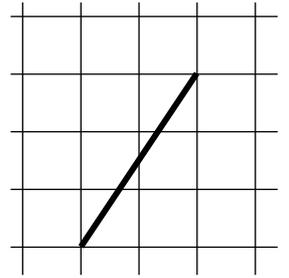
Change in **x**

In maths lines have gradients too.

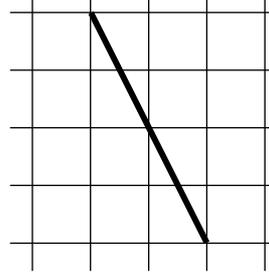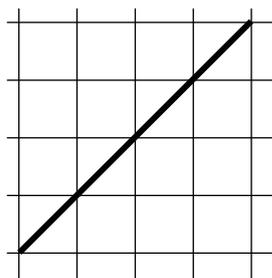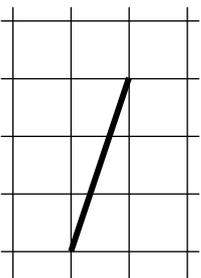Gradient = $\dfrac{\text{Change in } \mathbf{y}}{\text{Change in } \mathbf{x}}$

These lines have
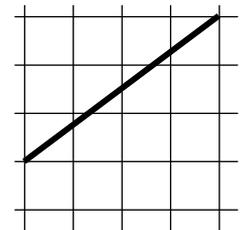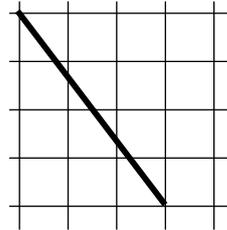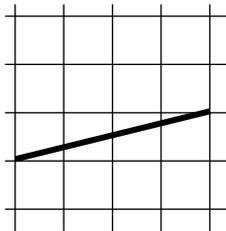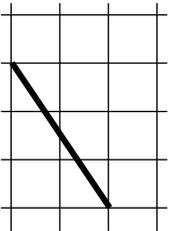**positive** gradients.

These lines have
negative gradients.

What is the **gradient** of each line ?

Gradients

Work out the **gradient** of each line.

Draw lines with these **gradients**.

$$\frac{2}{5}$$

$$\frac{5}{2}$$
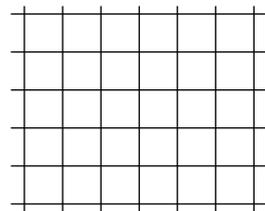
$$-\frac{3}{6}$$

$$-\frac{5}{4}$$

$$\frac{1}{5}$$

$$-\frac{1}{5}$$

$$5$$

$$-5$$

Gradients

Work out the **gradient** of each line.
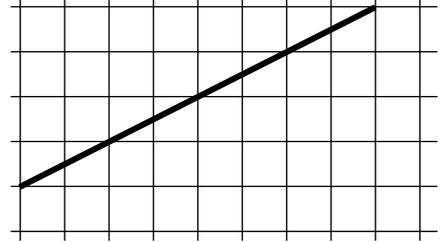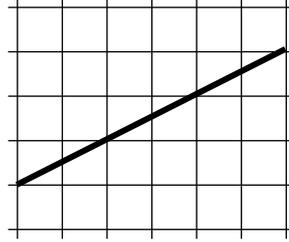
Look for points where each line passes through corners on the grid.
Use those points to draw a gradient triangle. Work out the **gradient** of each line.
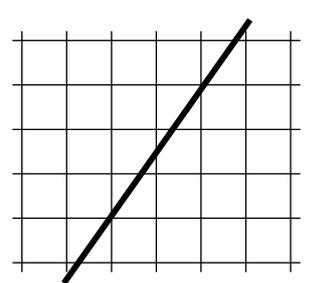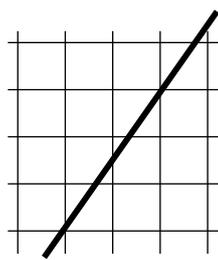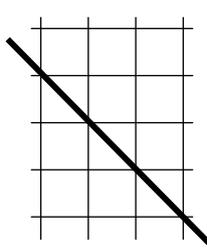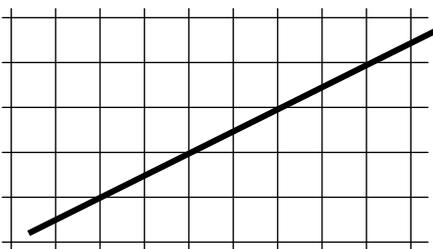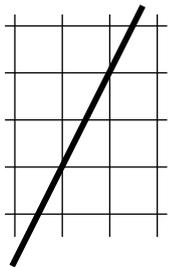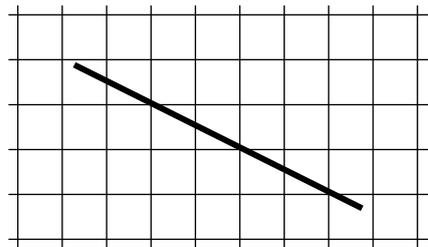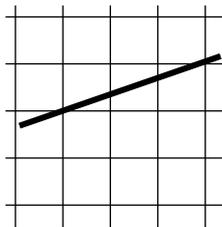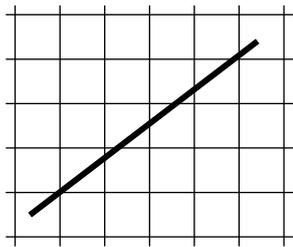
What is the **gradient** of a **horizontal** line ?
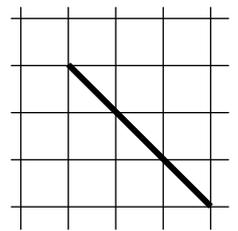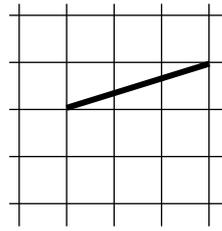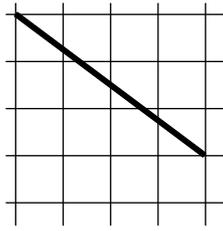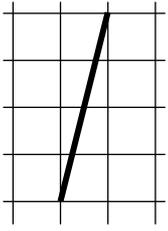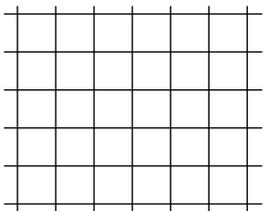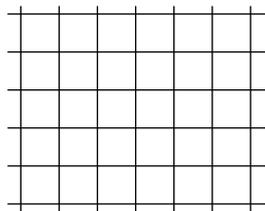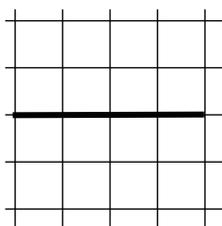
What is the **gradient** of a **vertical** line ?
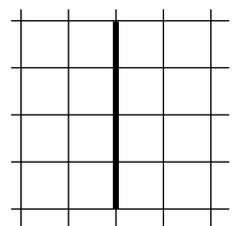
Gradients
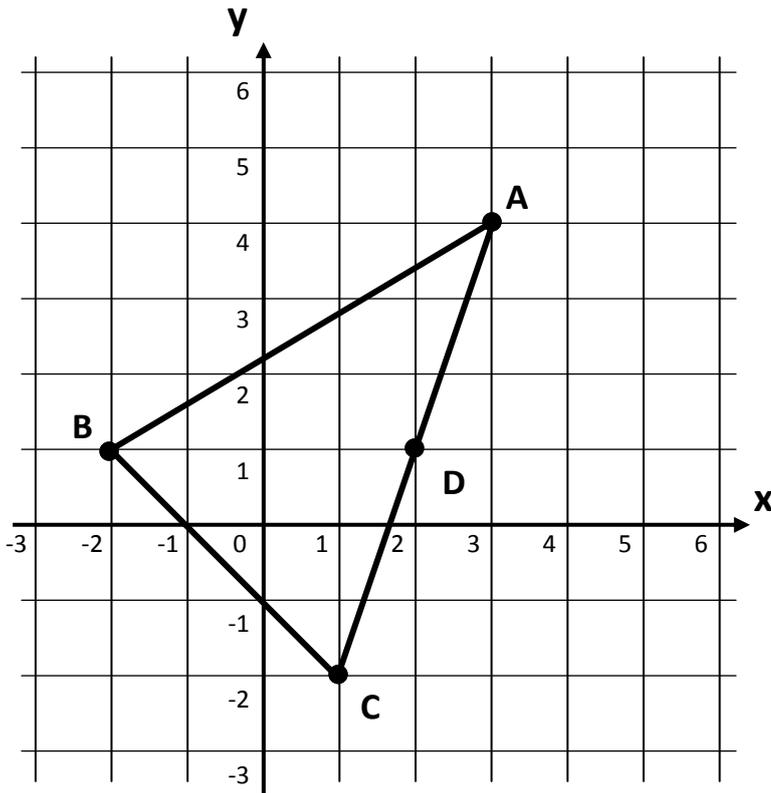
[1] Write down the **co-ordinates**
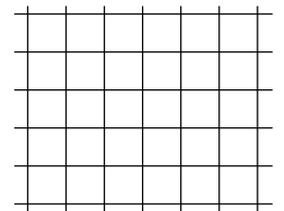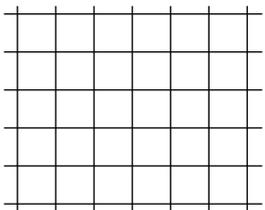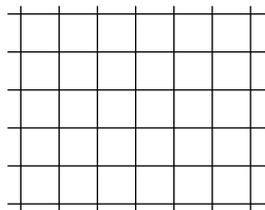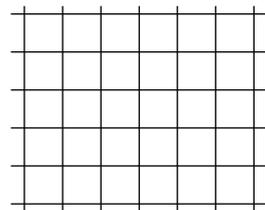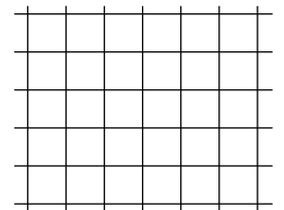   of points A, B, C, and D.

[2] Work out the gradients of these lines :

AB   BC   AC   AD   CD

---

[3] Draw a line passing through the
      point (0, 1) with gradient 2.

[4] Write down the co-ordinates of
      the point where the line crosses
      the x-axis.

[5] Draw a line parallel to the first
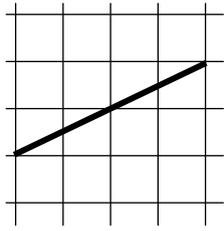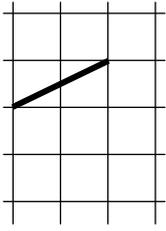   line. Make this line pass through
      the point (2, 1).

[6] Write down the co-ordinates of
      the point where the second line
      crosses the y axis.
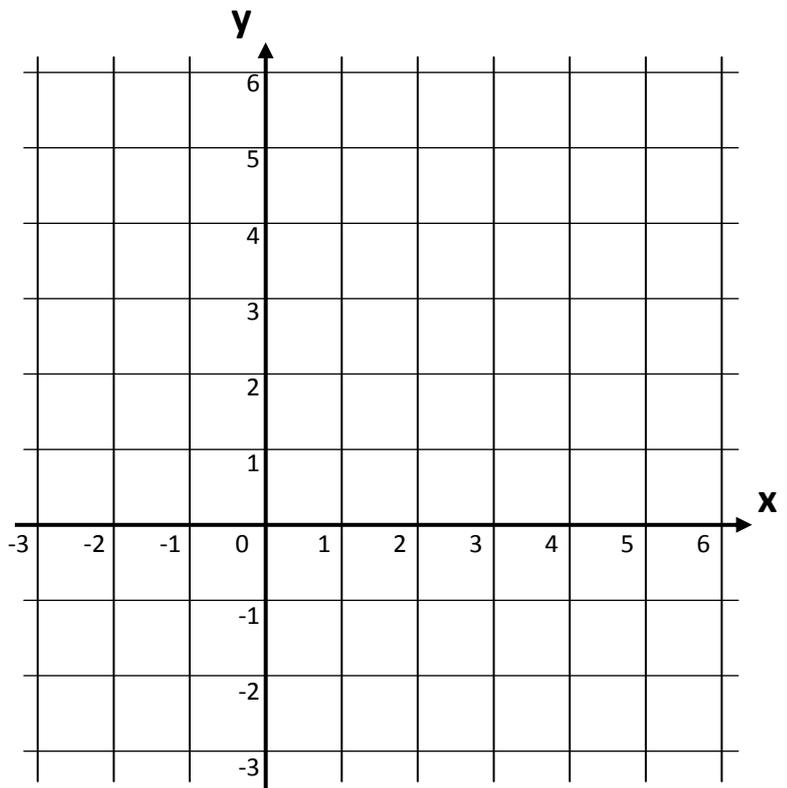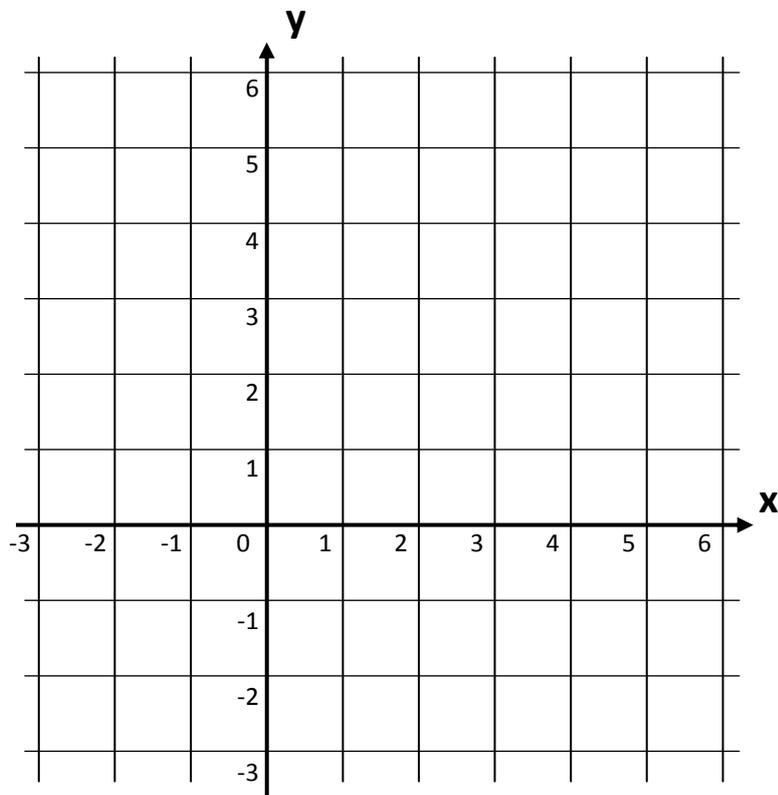
X	-1	0	1	2	3
y = 2x					

Fill in the table and use the values to draw the graph of **y = 2x**

X	-3	-2	-1	0	1
y = 2x + 3					

Draw the graph of **y = 2x + 3**

X	-1	0	1	2	3
y = 2x - 1					

Draw the graph of **y = 2x - 1**
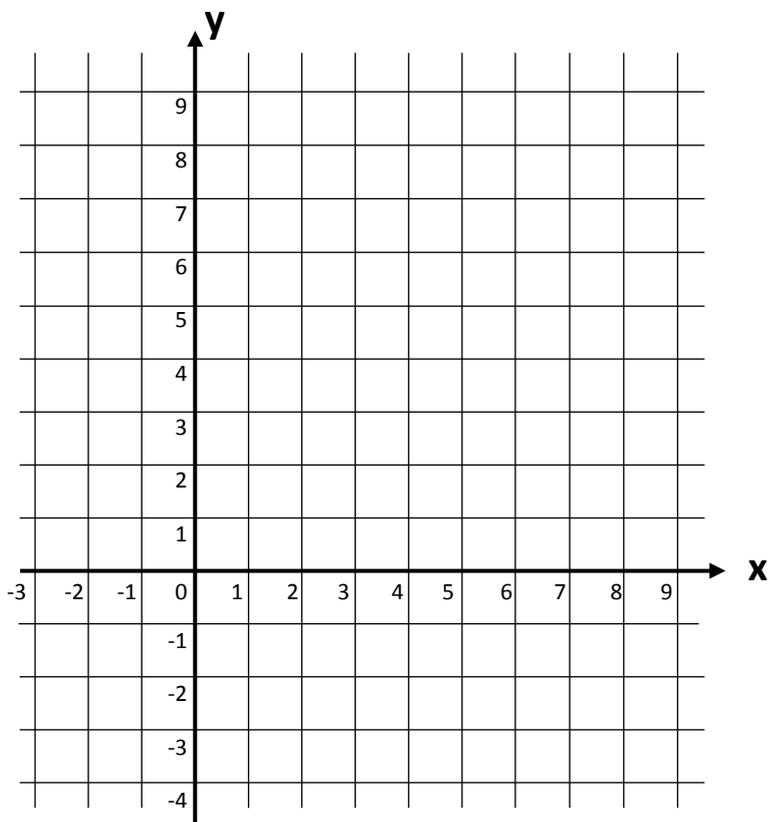
X	-1	0	1	2	3
y = 3x					

Fill in the table and use the values to draw the graph of **y = 3x**

X	-1	-0	1	2	3
y = 3x + 2					

Draw the graph of **y = 3x + 2**

X	-1	0	1	2	3
y = 3x - 1					

Draw the graph of **y = 3x - 1**
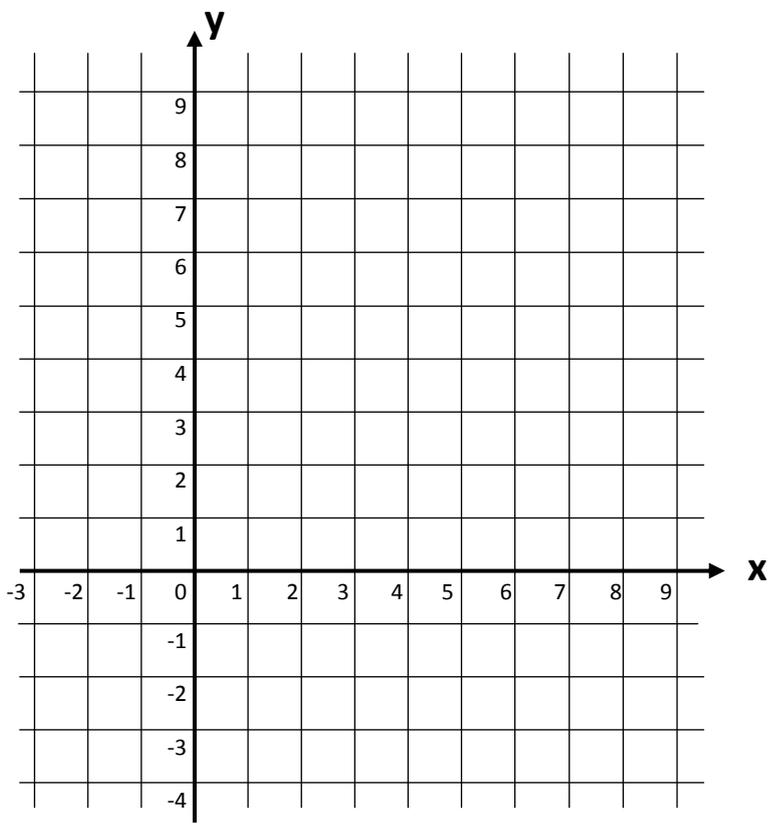
Draw these lines on the grid.

$y = 2x - 3$

Gradient _____

y-intercept _____

$y = -3x + 4$

Gradient _____

y-intercept _____

Draw these lines on the grid.

$y = x + 2$

Gradient _____

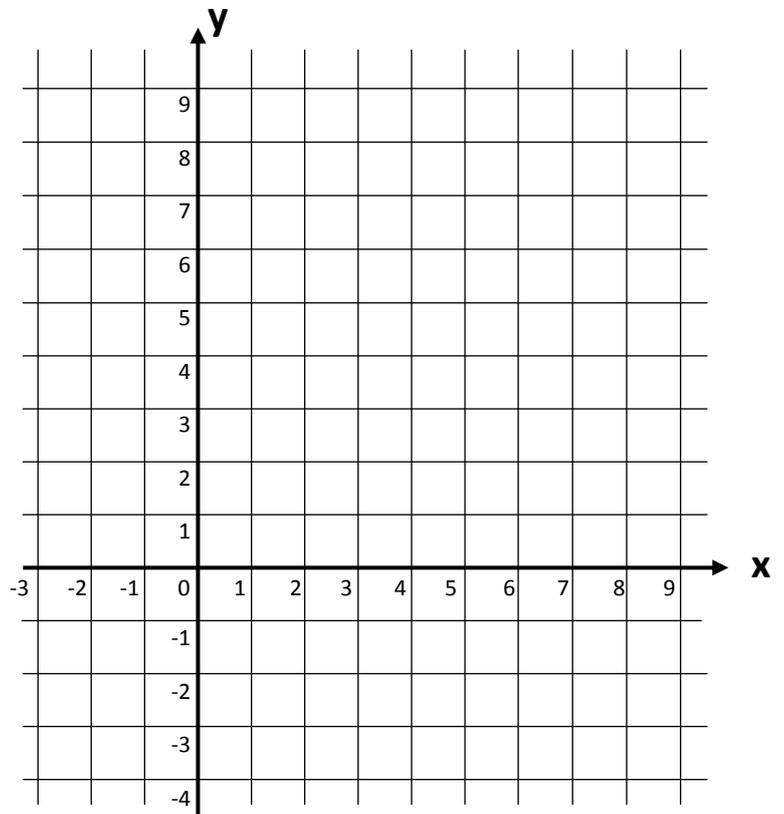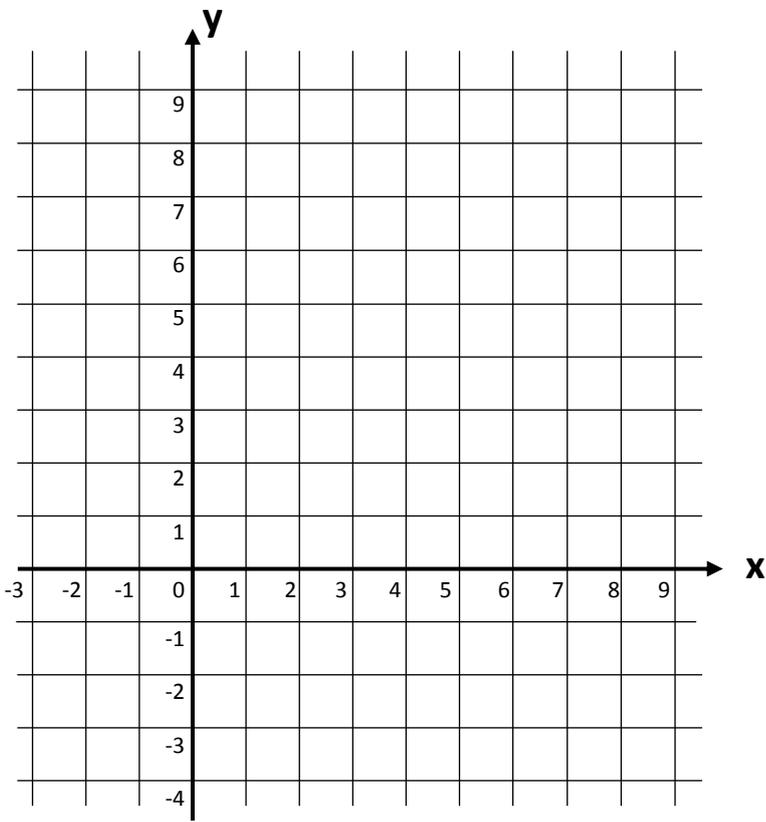y-intercept _____

$y = -x + 5$

Gradient _____

y-intercept _____

Draw these lines on the grid.

Gradient   4

y-intercept   2

Equation is _____

Gradient   -1

y-intercept   4

Equation is _____

Draw these lines on the grid.

Gradient   -2

y-intercept   6

Equation is _____

Gradient   ½

y-intercept   3

Equation is _____